

Atty. Docket No.
32405R026



3600
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Hiroshi Yoneda et al.

US Serial No.: 09/444,834

Examiner: PIPALA, E

Filed: November 22, 1999

Group Art Unit: 3661

For: AUTOMATIC GUIDANCE SYSTEM FOR FLIGHT VEHICLE HAVING
PARAFOIL AND NAVIGATION GUIDANCE APPARATUS FOR THE
SYSTEM

TRANSMITTAL SHEET

Assistant Commissioner for Patents
Washington, D.C. 20231

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TO 3600 MAIL ROOM

Sir:

Applicants transmit herewith the following documents relating to the above-
identified patent application:

Response to Office Action
Supplemental Information Disclosure Statement
PTO-1449
Copy of European Search Report
4 references

Please charge any additional fees due in connection with this filing, such as fees
under 37 C.F.R. §§ 1.16 or 1.17, to our Deposit Account No. 02-4300.

Respectfully submitted,
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March 19, 2001
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RESPONSE TO OFFICE ACTION

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Reconsideration of the Office Action of December 19, 2000 is respectfully requested.

Applicants note with appreciation the Examiner's reminder that there is still awaited the certified copy of the priority application for this case. Applicants will be providing the certified copy in a follow up communication subsequent to this filing.

Submitted herewith is a Supplemental Information Disclosure Statement which makes of record references cited in a European Search Report received for a corresponding European application, which report has a mail date of January 25, 2001. Included with the Supplemental Information Disclosure Statement is also an even more recently located (by the undersigned) reference to one of the same Applicants cited in the European Search Report. The European Search Report also cites an Abstract for the reference JP 08 156893.

In the Office Action, claims 1-17 were rejected as being considered anticipated under 35 U.S.C. 102(b) by JP-A- 5-185993. This rejection is respectfully traversed.

Original claims 1 and 11 of the present invention include 1) a step of estimating wind velocity and wind direction (a wind-velocity and wind-direction estimating unit) and 2) a step of determining a landing flight path of said flight vehicle based on the estimated wind velocity and wind direction (a land flight path determining unit). Accordingly, the present invention takes a significantly proactive approach which is designed to lessen the potential for wind induced error over a wide variety of wind levels.

In other words, the present invention features an automatic guidance system for guiding a flight vehicle having a parafoil to a target grounding point, which, after opening the parafoil, not only corrects the flight path based on an estimation of wind velocity and wind direction, but also determines a landing flight path to the grounding point. Then, in accordance with the landing flight path, the flight of the flight vehicle is guided, whereby the flight vehicle is landed with high precision in accordance with the landing flight path.

On the other hand, the reference JP-A-5-185993 judges a direction of a target descent position and a present traveling direction, and make the flight vehicle turn so as to correct the deviation between these directions. Reference '993 therefore only corrects the traveling direction toward the target descent position (a more reactive process as opposed to the more proactive process of the present invention), and with the more reactive technique of JP '993 accuracy of descent is lowered considerably under the influence of various wind levels, since, for example, the parafoil is unable to recover its altitude. Thus, JP '993 fails, for instance, to disclose the determining step (unit2) of the landing flight path. As described in the paragraph bridging pages 2 and 3 of the present application, this less proactive approach in JP '993 renders it susceptible to

a lowering of accuracy of descent.

In view of the foregoing, it is respectfully submitted that the JP '993 reference fails to disclose or suggest the originally claimed invention (hence, no claim amendments have been made) and confirmation for the same by way of a Notice of Allowance is earnestly solicited.

If any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §§ 1.16 or 1.17, please charge the fees to our Deposit Account No. 02-4300.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

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Dated: March 19, 2001

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